

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A data embedding device for embedding objective data to be embedded in a speech code obtained by encoding a speech in accordance with a speech encoding method based on a voice generation process of a human being, comprising:

an embedding judgment unit, for every speech code, to perform judgment processing to judge whether or not a speech code is capable of embedding data based on a liner spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder; and

an embedding unit to perform embedding processing to embed data to be embedded in a part of a LSP code, a pitch lag code and a fixed code, defined as embedding object parameter codes, among a speech code for which it is judged by the embedding judgment unit that a speech code is capable of embedding data, wherein the embedding unit replaces the embedding object parameter codes with the data to be embedded,

wherein the embedding judgment unit performs the judgment processing based on the past speech code after completion of the embedding processing performed by the embedding unit.

2. (canceled)

3. (currently amended) A data extraction device for extracting data embedded in a

speech code, comprising:

an extraction judgment unit to, for every speech code, judge whether or not data is being embedded in a speech code based on a liner spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder, wherein the past speech code is identical to a past speech code which was used for judging whether the speech code is capable of embedding data; and

an extraction unit to extract data being embedded in a part of a LSP code, a pitch lag code and a fixed code among a speech code for which it is judged by the extraction judgment unit that data is being embedded.

4. (canceled)

5. (currently amended) A data embedding/extraction device for executing a process for embedding data in a speech code and a process for extracting embedded data from the speech code, comprising:

an embedding judgment unit to perform judgment processing, for every speech code, to judge whether or not a speech code is capable of embedding data based on a linear spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder;

an embedding unit to perform embedding processing to embed data in a part of a LSP code, a pitch lag code and a fixed code, defined as embedding object parameter codes, among a speech code for which it is judged by the embedding judgment unit that a speech code is capable of embedding data, wherein the embedding unit replaces the

embedding object parameter codes with the data to be embedded, wherein the embedding judgment unit performs the judgment processing based on the past speech code after completion of the embedding processing performed by the embedding unit;

an extraction judgment unit to, for every speech code, judge whether or not data is being embedded in a speech code based on a LSP code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder, wherein the past speech code is identical to a past speech code which was used for judging whether the speech code is capable of embedding data; and

an extraction unit to extract data being embedded in a part of a LSP code, a pitch lag code and a fixed code among a speech code for which it is judged by the extraction judgment unit that data is being embedded.

6. (currently amended) A data embedding method for embedding data in a speech code, comprising:

judging whether or not a speech code is capable of embedding data based on a linear spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited liner prediction encoder; and

embedding data in a part of a LSP code, a pitch lag code and a fixed code, defined as embedding object parameter codes, among a speech code for which it is judged that a speech code is capable of embedding data, wherein the embedding includes replacing the embedding object parameter codes with the data to be embedded,

wherein the judging is performed based on the past speech code after completion of the embedding.

7. (canceled)

8. (currently amended) A data extraction method for extracting embedded data from a speech code, comprising:

judging whether or not data is being embedded in a speech code based on a liner spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder, wherein the past speech code is identical to a past speech code which was used for judging whether the speech code is capable of embedding data; and

extracting data being embedded in a part of a LSP code, a pitch lag code and a fixed code, defined as embedding object parameter codes, among a speech code for which it is judged that data is being embedded.

9. (canceled)

10. (currently amended) A data embedding/extraction method with respect to a speech code obtained by encoding a speech in accordance with a speech encoding method based on a voice generation process of a human being, comprising:

judging, for every speech code, whether or not a speech code is capable of embedding data based on a linear spectrum pair (LSP) code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder;

embedding data in a part of a LSP code, a pitch lag code and a fixed code, defined as embedding object parameter codes, among a speech code for which it is

judged that a speech code is capable of embedding data, wherein the embedding replaces the embedding object parameter codes with the data to be embedded, wherein the judging is performed based on the past speech code after completion of the embedding;

judging, for every speech code, whether or not data is being embedded in a speech code based on a LSP code, a pitch lag code, a fixed code and a gain code included in a past speech code output from a code excited linear prediction encoder, wherein the past speech code is identical to a past speech code which was used for judging whether the speech code is capable of embedding data; and

extracting data being embedded in a part of a LSP code, a pitch lag code and a fixed code among a speech code for which it is judged that data is being embedded.

11-20. (cancelled)